Little Hoover Commission
Public Hearing on Climate Change Adaptation
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Technology and Infrastructure: Protecting High-Investment Areas from Climate Change

Mister Chair and Co-Chair, members of the Commission, thank you for the kind invitation to speak with you today. Esteemed colleagues, it is a pleasure and honor for me to share this stage with you.

I am here representing the Silicon Valley Leadership Group and our more than 390 member companies. Founded in 1978 by David Packard of Hewlett-Packard, the Leadership Group represents Silicon Valley's most respected employers on issues, programs and campaigns that affect the economic health and quality of life in Silicon Valley, including energy, transportation, education, housing, health care, tax policy, economic vitality and the environment. Leadership Group members collectively provide nearly one of every three private sector jobs in Silicon Valley.

Importance of the issue

Over the next century, California and Silicon Valley is expected to experience a number of climate change impacts including sea level rise, increased coastal and riverine flooding, and more frequent and higher temperature extreme heat wave events. Climate change forecasting argues for a new approach to business resiliency that addresses what were once considered very low probability events with large impacts. Further, recent events demonstrate how business operations and profit margin calculations can be derailed and reversed by extreme and/or persistent weather events.

A useful example is the Thailand floods of 2011. Before the 2011 floods which were the worst in over half a century, Thailand produced approximately 43% of the world's hard disk drives (HDD). Western Digital Corporation, which produced one-third of the world's hard disks, lost 45% of its shipments because their major factory was inundated. A Toshiba factory, another of the four major makers of HDD, was also inundated. Toshiba was able to execute alternate production in the Philippines. While factories of Samsung and Seagate Technology, other two makers of the four major manufactures, were not inundated, they were forced to reduce production due to the lack of parts from suppliers who were impacted. HDD shipments from the industry's five major manufacturers declined severely in the fourth quarter of 2011, down 30% from the previous quarter. The effect of the lost electronic parts production rippled across the global economy. The lack of hard disk drives increased the price of desktop HDD by 80%-190% and mobile HDD by 80-150%. In addition, at the beginning of 2012, Western Digital's earnings decreased by $145 million, while Seagate increased its profit from $150 million.

In order to protect the region's vital resources – people, infrastructure, ecosystems and economy – it is important to develop and implement climate adaptation tools, strategies and plans. Thankfully, the Golden State has been an unwavering leader on the issue of climate change for quite some time – blazing a trail on clean air and energy – despite the cultural inertia.

Addressing private sector obstacles to action

A growing number of companies are recognizing that they must take action now to more effectively manage climate change risks. However, there are a number of barriers to action, centered on a few key themes:

- **Uncertainty –** Companies are generally aware of the risks. And, while most companies have

established business continuity or emergency preparedness plans, few have incorporated the increased risks associated with more frequent or intense extreme events associated with climate change due to uncertainty.

- **Lack of reliable and useful data –** A major barrier preventing many companies from taking action is uncertainty around the scope and nature of the risks. Many companies find it challenging to integrate factors involving physical climate change into corporate risk management because it is difficult to sufficiently quantify the precise nature and timing of extreme weather and climate change impacts, and they lack the tools to incorporate these changes into their corporate decision-making.

Role of Government & Public-private Partnerships

Companies face significant barriers when making decisions about how and when to invest in enhancing their resilience to climate change. While overcoming these barriers is largely an internal challenge, there are a number of steps that government can take to facilitate corporate efforts. The Silicon Valley Leadership Group agrees with a 2013 report by the Center for Climate and Energy Solutions, stating that government can and should provide and coordinate efforts around climate change research and enhance the resilience to weather extremes of critical public infrastructure. In particular, government can help:

- **Provide credible, readily accessible scientific information, models and tools** – Companies need government agencies to provide more comprehensive and detailed data and tools related to climate change impacts. Governments can help provide the basic scientific observations, research, modeling, and tool development that are critical to supporting business decisions.

  The United Kingdom provides a good example of the role that governments can play in collecting data, directing and coordinating research studies, and translating findings into user-friendly tools and resources for business. Since 1997, the UK government has pursued an aggressive national program to better understand and manage the risks of extreme weather and climate change. The UK Climate Change Act of 2008 directs companies with "functions of a public nature" (such as water and energy utilities) to report on how they are assessing and acting on the risks and opportunities from a changing climate. To assist companies in this effort, the UK Met Office (the national weather service) acts as a "one-stop shop" of information and assistance on climate and weather. The UK Climate Impacts Programme (UKCIP), established by the government in 1997, coordinates national research and tools that companies can use to evaluate and manage impacts (Box 10). The UKCIP has developed climate change projections to help companies test their resilience to a range of future conditions. The scenarios provide both historical and projected information to 2100 for the UK, based on climate change simulations from the Met Office's Hadley Research Centre.

- **Enhance the resilience of public infrastructure** – Companies face a broad range of potential impacts that are not directly within their control but which can have significant impacts on the losses they suffer from extreme events and impacts associated with climate change. Extreme weather events frequently damage critical elements of public infrastructure—roads, bridges, ports—that are important to company operations. Government can help address the vulnerability of public infrastructure by:
  - Developing standards for location, design, and maintenance
  - Utilizing zoning to address land use conflicts and manage risks, particularly in coastal and floodplain areas
  - Maintaining transportation routes along rivers and at ports
  - Managing flood insurance programs that send property owners the signal to minimize climate risk
  - Maintaining critical natural resources (e.g., sand dunes, wetlands) that can act as buffers against storms

- Enhancing and adding redundancies to communications systems, including early warning systems
- Upgrading major water supply infrastructure (e.g., dams, irrigation lines)
- Providing funds for and directing emergency response and rebuilding efforts following extreme weather events

Key local and regional efforts

While we believe the government has an important role to play in regards to addressing the beyond-the-fenceline responsibilities noted above, we are well aware we cannot just wait for government to solve our problems for us; business must do its part, often in partnership with government agencies and other institutions. That is why the Leadership Group, in partnership with a number of other actors, is currently engaged in important efforts at the local and regional level, including:

1. **Silicon Valley 2.0** – SV 2.0 is a project funded substantially by the California Strategic Growth Council (SGC) to develop a regional climate adaptation plan and accompanying decision-support tool. SV 2.0 is a regional effort, managed by the County of Santa Clara, to help plan for and address anticipated impacts of climate change and reduce the generation of local greenhouse gas (GHG) emissions. SV 2.0 aims to examine and improve regional economic resiliency, including:
   - Local quality of life indicators that drive business development, permanence, and relocation
   - Local climate related risks, costs, and economic impacts on business
   - Impact of global climate projections on corporate supply chains
   - Potential climate related local business development and innovation opportunities

   Engaging the private sector is a core component to economic resiliency, as it is the central force driving innovation in Silicon Valley. The Leadership Group is convening a working group composed of key business representatives, to:
   - Assess vulnerability of the region's private sector, notably Santa Clara campuses and supply chains
   - Identify gaps in private sector plans and actions to mitigate and adapt to the impacts of climate change
   - Evaluate business opportunities for public-private partnerships

   SV 2.0 project outcomes include:
   - *Santa Clara County Climate Change Adaptation Plan* – The plan will evaluate the exposure of the infrastructure network – power, water, transportation, communications - to climate impacts, and the potential consequences to the economy, society, and environment. The plan will also propose preemptive adaptation strategies that improve infrastructure network resiliency
   - *Decision-Making Support Tool* – A decision-making tool will be developed which estimates the economic consequences that the physical impacts of climate change will create and help inform public official's decision-making with regards to public infrastructure and services investment and policy decisions.

2. **SF Baylands restoration and flood protection initiative** – Bay Area businesses and communities are at risk of flooding due to a changing climate and vulnerable infrastructure. The San Francisco South Bay is at particular risk of flooding due to our geography and development as we have, over time, built infrastructure, homes, and businesses right up to the water's edge.

   In an effort to protect the region and ensure that Silicon Valley continues to be the epicenter of innovation, a coalition of leading organizations has come together to address the Baylands restoration and flood improvement needs of the region.

Acquisition of key areas and long-term planning has been accomplished through public-private partnerships with federal, state, and local public agencies, and with the leadership of Senator Dianne Feinstein. Bay Area leaders are working together to support activities and policies to restore habitat and improve flood protection, including:

- Assess and support existing and new sources of funding
- Support efforts of Senator Feinstein to advance safe, efficient and timely implementation of restoration and flood projects
- Help inform a public education campaign and potential 2014 9-county ballot measure campaign

$2 billion is the estimated restoration and flood protection cost for lands in public ownership. It is going to take a coordinated effort in partnership at the federal, state and local levels to pay to get this important work done. A key first step has been realized – the passage last November of Measure B in Santa Clara, which provides critical funding for shoreline analyses. A public education campaign is set to launch next month, followed by a potential ballot campaign.

Bay Area Flood Risk – Key Facts

Much of the San Francisco South Bay is protected by salt pond levees built more than 100 years ago. These existing levees do not meet federal flood standards and are at increasing risk of failure. For areas like the South Bay, such failures could be devastating.

- SF Bay has approximately 275 miles of flood control levees along it shores
- Large sections of the bay shoreline were diked with levees to enable various kinds of development
- Existing salt pond levees were not engineered and do not meet federal flood protection standards
- While sea level rise will be gradual, strong evidence indicates the intensity and frequency of storm events will increase, i.e., an extreme storm could happen at almost any time
- Many of the levees in the South Bay were not built to withstand a future earthquake
- The South Bay is very vulnerable; parts of Santa Clara County are 13' below sea level
- $62 billion in public assets are at risk, including Port of Oakland, two major airports, water treatment plants, as well as miles of roadways.
- Over 250 high-tech companies are at risk in flood zone in the South Bay alone

Closing

While the effects of climate change bring some new opportunities for companies, they primarily create new challenges. Some companies and industries are more at risk than others, but all will experience impacts.

Many companies are already building the capacity to learn from the initial steps that are being taken. Companies are even now engaged in a number of efforts including strategic planning, investing in infrastructure for the future, diversifying their supply chains and safeguarding their employees. Most effectively preparing for the future requires robust public-private partnerships, utilizing the most up-to-date information available about risks and innovative financing at the local, regional, state and federal levels.[1]

Thank you once again for the opportunity to speak on this important topic.

[1] *Often leveraging these dollars together, as is envisioned for the SF Baylands restoration and flood protection initiative.*

Appendix 1

Vulnerability of the SF Bay Infrastructure Network